

What Is Claimed Is:

1. A method for diagnosing operation of an internal combustion engine having a compressor for compression of air supplied to the internal combustion engine, comprising:

measuring an actual pressure ratio across the compressor;  
comparing the measured actual pressure ratio with a predetermined reference value; and

detecting an error as a function of the result of the comparison.

2. The method as recited in claim 1, wherein the predetermined reference value is a setpoint pressure ratio across the compressor.

3. The method as recited in claim 1, wherein the predetermined reference value is a modeled actual pressure ratio determined based on at least one engine parameter.

4. The method as recited in claim 3, wherein the modeled actual pressure ratio is determined as a function of an engine speed and an air mass flow rate.

5. The method as recited in claim 2, wherein the compressor is an electrically operated supercharger.

6. The method as recited in claim 5, wherein the diagnosis is performed in one of an idling state and a near-idling state.

7. The method as recited in claim 5, wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

8. The method as recited in claim 6, wherein the electrically operated supercharger is triggered in a defined manner, as

part of an early run-up.

9. The method as recited in claim 8, wherein a divert air valve is closed for the diagnosis.

10. The method as recited in claim 2, wherein the compressor is one of an exhaust gas turbocharger and a supercharger.

11. The method as recited in claim 3, wherein the compressor is an electrically operated supercharger.

12. The method as recited in claim 11, wherein the diagnosis is performed in one of an idling state and a near-idling state.

13. The method as recited in claim 11, wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

14. The method as recited in claim 12, wherein the electrically operated supercharger is triggered in a defined manner, as part of an early run-up.

15. The method as recited in claim 14, wherein a divert air valve is closed for the diagnosis.

16. The method as recited in claim 3, wherein the compressor is one of an exhaust gas turbocharger and a supercharger.

17. A system for diagnosing operation of an internal combustion engine having a compressor for compression of air supplied to the internal combustion engine, comprising:

- a measurement unit for measuring engine operation variables;

- a determination unit for determining an actual pressure

ratio across the compressor based on the engine operation variables measured by measurement unit;

a comparator unit for comparing the determined actual pressure ratio with a predetermined reference value; and

an error detection unit for detecting an error as a function of the result of the comparison by the comparator unit.